

Abstract of the Disclosure

Methods and compositions useful for detecting an *in vivo* blood pool, monitoring the distribution of a compound of interest to a desired site in an organism by magnetic resonance imaging, monitoring the accumulation of a compound of interest at a desired site *in vivo* by magnetic resonance imaging, and monitoring the release of liposomal contents to an external stimulus at a desired site *in vivo* by magnetic resonance imaging are disclosed. Some compositions comprise enviroinsensitive or non-sensitive liposomes. Contrast agents, such as manganese-based compounds, are also disclosed.